

REMARKS:

Claims 1, 8, 9, 10

Claims 1, 8, 9 and 10 have been rejected under 35 USC 102(e) as being anticipated by Sato et al. (US5986858).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, the identical invention must be shown in as complete detail as contained in the claim. *Richardson v. Suzuki Motor Co.* 868 F.2d 1226, 1236, 9USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants respectfully disagree that Sato discloses each and every element of claims 1 and 9. In the instant case, claim 1 requires exposing one or more of the first and second surfaces to an oxygen partial pressure, then decreasing the oxygen partial pressure before depositing a subsequent layer. Claim 9 requires exposing the first surface to an oxygen partial pressure, then decreasing the oxygen partial pressure before depositing a subsequent layer, and exposing the second surface to an oxygen partial pressure, then decreasing the oxygen partial pressure before depositing a subsequent layer.

The rejection of claims 1 and 9 states that Sato discloses exposing layer 42B to oxygen to produce a CoOx layer 42C, and that this is the exposing of the first surface to an oxygen partial pressure. The rejection continues by indicating that after that, the aluminum film is formed by sputtering, and that this is decreasing the oxygen partial pressure to zero to deposit the metallic Al layer. Applicants respectfully disagree. Nowhere does Sato indicate that the oxygen partial pressure is decreased before depositing the Al layer. Rather, it appears that the Examiner assumes that Sato removes oxygen from the chamber prior to depositing the Al layer, without any specific support in the record for such an assumption. A rejection cannot be based on assumptions. Therefore, it is Applicant's contention that Sato fails to explicitly disclose each and

every limitation of claims 1 and 9. Accordingly, the rejection violates the rule of *Verdegal Bros.*, *supra*, and must be withdrawn.

Nor does the rejection show that Sato discloses the identical invention in as complete detail as contained in the claim, as required by *Richardson*, *supra*. For this reason as well, the rejection of claims 1 and 9 is erroneous.

For any of the foregoing reasons, claims 1 and 9 are believed to be allowable. Reconsideration and allowance of claims 1 and 9 is respectfully requested.

Claim 2 depends from claim 1, and therefore incorporates the limitations of claim 1. By virtue of its dependence, claim 2 is also believed to be allowable.

Claim 10 depends from claim 9, and therefore incorporates the limitations of claim 9. By virtue of its dependence, claim 10 is also believed to be allowable.

Claims 6, 7

Claims 6 and 7 have been rejected under 35 USC 103(a) as unpatentable over Sato in view of Pinarbasi (US5871622).

The rejection applies Sato as for claim 1. Claims 6 and 7 depend from claim 1, and therefore the rejection suffers from the same deficiencies as set forth above with respect to claim 1. Because Pinarbasi has merely been added to allegedly show introduction of oxygen via a shutter, claims 6 and 7 are believed to be allowable over the combination proposed by the Examiner. Reconsideration and allowance of claims 6 and 7 is respectfully requested.

Further, regarding claim 7, Applicant respectfully disagrees that Pinarbasi discloses that the oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the first and second surfaces to be directly exposed to the oxygen, as claimed.

The analysis of obviousness was set forth in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). In order to establish a *prima facie* case of obviousness, three

basic criteria must be met.

First, there must be some *suggestion or motivation*, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings of the references. Second, there must be a *reasonable expectation of success*. Finally, the prior art reference or combined references must teach or suggest *all the claim limitations*. *The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art*, and not based on applicant's disclosure (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; emphasis added).

Applicants respectfully traverse the rejection as failing the *Graham* test. Specifically, the combination proposed in the rejection fails the third element of the *Graham* test.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Rayka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Claim 7 requires that the oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the first and second surfaces to be directly exposed to the oxygen. In sharp contrast, Pinarbasi indicates that the oxygen is introduced while the shutter is closed, not open as claimed. See Pinarbasi col. 6, lines 52-62. Because not all claim limitations are taught or suggested, the rejection of claim 7 is improper as failing the third element of the *Graham* test.

Claims 2-5

Claims 2-5 have been rejected under 35 USC 103(a) as unpatentable over Sato in view of Deguchi et al. (US5862021).

The rejection applies Sato as for claim 1. Claim 2 contains similar limitations to claim 1, and therefore the rejection suffers from the same deficiencies as set forth above with respect to claim 1. Because Deguchi has merely been added to allegedly show a partial pressure of oxygen, claims 2-5 are believed to be allowable over the combination

proposed by the Examiner. Reconsideration and allowance of claims 2-5 is respectfully requested.

Claims 11-12

Claims 11-12 have been rejected under 35 USC 103(a) as unpatentable over Sato in view of Deguchi and in yet further view of Pinarbasi.

The rejection applies Sato and Deguchi as for claims 2-5 above. Claims 11 and 12 depend from claim 2, and therefore the rejection suffers from the same deficiencies as set forth above with respect to claim 2. Because Pinarbasi has merely been added to allegedly show introduction of oxygen via a shutter, claims 11-12 are believed to be allowable over the combination proposed by the Examiner. Reconsideration and allowance of claims 11-12 is respectfully requested.

Further, regarding claim 12, Applicant respectfully disagrees that Pinarbasi discloses that the oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the first and second surfaces to be directly exposed to the oxygen, as claimed.

Applicant respectfully traverses the rejection as failing the *Graham* test. Specifically, the combination proposed in the rejection fails the third element of the *Graham* test. Claim 12 requires that the oxygen molecules are directed toward the substrate, and a substrate shutter is fully open for the first and second surfaces to be directly exposed to the oxygen. In sharp contrast, Pinarbasi indicates that the oxygen is introduced while the shutter is closed, not open as claimed. See Pinarbasi col. 6, lines 52-62. Because not all claim limitations are taught or suggested, the rejection of claim 12 is improper as failing the third element of the *Graham* test.

Claims 13-15

New claims 13-15 have been added to further define and vary the scope of the present invention. The claims are fully supported in the present application and drawings as originally filed. No new matter has been added.

These claims are also believed to be patentable over the prior art of record. Particularly, claims 13-15 each require that the spacer layer is deposited prior to significant oxidation of the first ferromagnetic layer. In sharp contrast, Sato exposes the Co layer 42B (Fig. 15) to oxygen to form a CoO_x layer 42C [called a diffusion barrier layer]. Likewise, both Deguchi and Pinarbasi form oxide layers. Allowance of claims 13-15 is respectfully requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 09-0466 (Order No. SJO920000063US2).

Respectfully submitted,

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